

Attorney Docket No. 740756-2724
Application No. 10/827,534
Page 2

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method for manufacturing a semiconductor element comprising:
forming a gate insulating film over a semiconductor region;
forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
forming an insulating film covering the gate electrode;
exposing a part of the semiconductor region;
forming a conductive film over the semiconductor region after exposing a part of the semiconductor region;
forming a resist over the conductive film;
removing a portion of the resist to form a resist mask;
etching a part of the conductive film by using the resist mask; and
etching a part of the etched conductive film.
2. (Original) A method for manufacturing a semiconductor element comprising:
forming a gate insulating film over a semiconductor region;
forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
forming an insulating film covering the gate electrode;
exposing a part of the semiconductor region;
forming a conductive film over the semiconductor region after exposing a part of the semiconductor region;
forming a resist over the conductive film;
removing a portion of the resist to form a resist mask;
etching a part of the conductive film by using the resist mask; and
etching a part of the etched conductive film and a part of the semiconductor region.

Attorney Docket No. 740756-2724

Application No. 10/827,534

Page 3

3. (Original) A method for manufacturing a semiconductor element comprising:

- forming a gate insulating film over a semiconductor region;
- forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
- exposing a part of the semiconductor region;
- forming a conductive film over the semiconductor region after exposing a part of the semiconductor region;
- etching a part of the conductive film;
- forming a resist over the conductive film;
- removing a portion of the resist to form a resist mask; and
- etching a part of the conductive film by using the resist mask.

4. (Original) A method for manufacturing a semiconductor element comprising:

- forming a gate insulating film over a semiconductor region;
- forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
- exposing a part of the semiconductor region;
- forming a conductive film over the semiconductor region after exposing a part of the semiconductor region;
- etching a part of the conductive film and a part of the semiconductor region;
- forming a resist over the conductive film;
- removing a portion of the resist to form a resist mask; and
- etching a part of the conductive film by using the resist mask.

5. (Original) A method for manufacturing a semiconductor element comprising:

- forming a first insulating film over a semiconductor region;
- forming a first conductive film over the first insulating film;
- forming a second insulating film over the first conductive film;
- forming a hard mask by etching the second insulating film;
- etching the first conductive film by using the hard mask as a mask to form a gate electrode;

W679055.1

Attorney Docket No. 740756-2724

Application No. 10/827,534

Page 4

forming a third insulating film over the semiconductor region;
etching the third insulating film to form a sidewall;
etching the first insulating film by using the sidewall and the hard mask as a mask to form a gate insulating film;
exposing a part of the semiconductor region;
forming a second conductive film;
forming a resist over the second conductive film;
removing a portion of the resist to form a resist mask;
etching a part of the second conductive film by using the resist mask as a mask; and
etching a part of the etched second conductive film and a part of the semiconductor region to form a source and drain electrode.

6. (Original) A method for manufacturing a semiconductor element comprising:
forming a first insulating film over a semiconductor region;
forming a first conductive film over the first insulating film;
forming a second insulating film over the first conductive film;
forming a hard mask by etching the second insulating film;
etching the first conductive film by using the hard mask as a mask to form a gate electrode;
forming a third insulating film over the semiconductor region;
etching the third insulating film to form a sidewall;
etching the first insulating film by using the sidewall and the hard mask as a mask to form a gate insulating film;
exposing a part of the semiconductor region;
forming a second conductive film;
etching a part of the second conductive film;
forming a resist over the second conductive film;
removing a portion of the resist to form a resist mask; and
etching a part of the second conductive film by using the resist mask as a mask to form a source and drain electrode.

Attorney Docket No. 740756-2724
Application No. 10/827,534
Page 5

7. (Original) A method for manufacturing a semiconductor element according to Claim 1, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

8. (Original) A method for manufacturing a semiconductor element according to Claim 1, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

9. (Original) A method for manufacturing a semiconductor element according to Claim 1, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

10. (Original) A method for manufacturing a semiconductor element according to Claim 9, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

11. (Original) A method for manufacturing a semiconductor element according to Claim 9, wherein the semiconductor thin film is a crystalline silicon film.

12. (Original) A method for manufacturing a semiconductor element according to Claim 2, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

13. (Original) A method for manufacturing a semiconductor element according to Claim 2, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

14. (Original) A method for manufacturing a semiconductor element according to Claim 2, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

Attorney Docket No. 740756-2724
Application No. 10/827,534
Page 6

15. (Original) A method for manufacturing a semiconductor element according to Claim 14, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

16. (Original) A method for manufacturing a semiconductor element according to Claim 14, wherein the semiconductor thin film is a crystalline silicon film.

17. (Original) A method for manufacturing a semiconductor element according to Claim 3, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

18. (Original) A method for manufacturing a semiconductor element according to Claim 3, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

19. (Original) A method for manufacturing a semiconductor element according to Claim 3, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

20. (Original) A method for manufacturing a semiconductor element according to Claim 19, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

21. (Original) A method for manufacturing a semiconductor element according to Claim 19, wherein the semiconductor thin film is a crystalline silicon film.

22. (Original) A method for manufacturing a semiconductor element according to Claim 4, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

23. (Original) A method for manufacturing a semiconductor element according to

Attorney Docket No. 740756-2724
Application No. 10/827,534
Page 7

Claim 4, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

24. (Original) A method for manufacturing a semiconductor element according to Claim 4, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

25. (Original) A method for manufacturing a semiconductor element according to Claim 24, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

26. (Original) A method for manufacturing a semiconductor element according to Claim 24, wherein the semiconductor thin film is a crystalline silicon film.

27. (Original) A method for manufacturing a semiconductor element according to Claim 5, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

28. (Original) A method for manufacturing a semiconductor element according to Claim 5, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the second conductive film.

29. (Original) A method for manufacturing a semiconductor element according to Claim 5, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

30. (Original) A method for manufacturing a semiconductor element according to Claim 29, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

31. (Original) A method for manufacturing a semiconductor element according to

Attorney Docket No. 740756-2724

Application No. 10/827,534

Page 8

Claim 29, wherein the semiconductor thin film is a crystalline silicon film.

32. (Original) A method for manufacturing a semiconductor element according to Claim 6, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

33. (Original) A method for manufacturing a semiconductor element according to Claim 6, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the second conductive film.

34. (Original) A method for manufacturing a semiconductor element according to Claim 6, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

35. (Original) A method for manufacturing a semiconductor element according to Claim 34, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

36. (Original) A method for manufacturing a semiconductor element according to Claim 34, wherein the semiconductor thin film is a crystalline silicon film.

Claims 37-48 (Canceled)

49. (Original) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 1.

50. (Original) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 2.

51. (Original) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 3.

W679055.1

Attorney Docket No. 740756-2724
Application No. 10/827,534
Page 9

52. (Original) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 4.

53. (Original) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 5.

54. (Original) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 6.

Claim 55 (Canceled)

Claim 56 (Canceled)

57. (New) A method for manufacturing a semiconductor element comprising:
forming a gate insulating film over a semiconductor region;
forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
forming an insulating film covering the gate electrode;
etching a portion of the insulating film to expose a part of the semiconductor region and to form portions of the insulating film remaining on at least side surfaces of the gate electrode;
forming a conductive film over the semiconductor region after exposing a part of the semiconductor region;
forming a resist over the conductive film;
removing a portion of the resist to form a resist mask;
etching a part of the conductive film by using the resist mask; and
etching a part of the etched conductive film, and
wherein said part of the semiconductor region is outside of the remaining portion of the insulating film.

Attorney Docket No. 740756-2724

Application No. 10/827,534

Page 10

58. (New) A method for manufacturing a semiconductor element according to Claim 57, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

59. (New) A method for manufacturing a semiconductor element according to Claim 57, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

60. (New) A method for manufacturing a semiconductor element according to Claim 57, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

61. (New) A method for manufacturing a semiconductor element according to Claim 60, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

62. (New) A method for manufacturing a semiconductor element according to Claim 60, wherein the semiconductor thin film is a crystalline silicon film.

63. (New) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 57.

64. (New) A method for manufacturing a semiconductor element comprising:
forming a gate insulating film over a semiconductor region;
forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
forming an insulating film covering the gate electrode;
exposing parts of the semiconductor region;
forming a first conductive film over the semiconductor region after exposing the parts of the semiconductor region;
forming a resist over the first conductive film;

Attorney Docket No. 740756-2724

Application No. 10/827,534

Page 11

removing a portion of the resist to form a resist mask;
etching a part of the first conductive film by using the resist mask to form a second conductive film; and
etching a part of the second conductive film to form a source electrode and a drain electrode,
wherein each source electrode and drain electrode covers a side surface and an upper surface of the semiconductor region.

65. (New) A method for manufacturing a semiconductor element according to Claim 64, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

66. (New) A method for manufacturing a semiconductor element according to Claim 64, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

67. (New) A method for manufacturing a semiconductor element according to Claim 64, wherein the semiconductor region is a semiconductor thin film.

68. (New) A method for manufacturing a semiconductor element according to Claim 67, wherein the semiconductor thin film is a crystalline silicon film.

69. (New) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 64.

70. (New) A method for manufacturing a semiconductor element comprising:
forming a gate insulating film over a semiconductor region;
forming a gate electrode over the semiconductor region with the gate insulating film interposed therebetween;
forming an insulating film covering the gate electrode;
exposing a part of the semiconductor region;

Attorney Docket No. 740756-2724

Application No. 10/827,534

Page 12

forming a first conductive film over the semiconductor region after exposing a part of the semiconductor region;

forming a resist over the first conductive film;

removing a portion of the resist to form a resist mask;

etching a part of the first conductive film by using the resist mask to form a second conductive film;

etching a part of the second conductive film to form a source electrode and a drain electrode,

forming an interlayer insulating film over the source electrode and the drain electrode, and

forming at least one connection wiring over the interlayer insulating film,

wherein said connection wiring is connected to one of the source electrode and the drain electrode through a hole of the interlayer insulating film.

71. (New) A method for manufacturing a semiconductor element according to Claim 70, wherein the resist mask is formed by developing after exposing an entire face of the resist to light.

72. (New) A method for manufacturing a semiconductor element according to Claim 70, wherein the resist mask is formed by etching an entire face of the resist, and exposing a part of the conductive film.

73. (New) A method for manufacturing a semiconductor element according to Claim 70, wherein the semiconductor region is a semiconductor substrate or a semiconductor thin film.

74. (New) A method for manufacturing a semiconductor element according to Claim 73, wherein the semiconductor substrate is a single crystal silicon substrate or a compound semiconductor substrate.

75. (New) A method for manufacturing a semiconductor element according to Claim

Attorney Docket No. 740756-2724
Application No. 10/827,534
Page 13

73, wherein the semiconductor thin film is a crystalline silicon film.

76. (New) A method for manufacturing a semiconductor device having a method for manufacturing a semiconductor element according to Claim 70.